TEXTILE TECHNOLOGY DIGEST

VOLUME 12 SEPTEMBER, 1955 NUMBER 9

ABSTRACTS

FIBERS A

The mechanical properties of fibers.

A. Brown (Carbide and Carbon Chemicals Co.). *Textile Research J. 25:* 617-628 (July, 1955).

The presentation of the mechanical behavior of fibers considers both the practical and basic approaches, that is, the correlation of fiber properties with fabric properties and the correlation of molecular and intermolecular structure with fiber properties. Only tensional behavior is considered, particularly the stress-strain curve. 20 figures.

The action of acids on cotton and rayon.

H. Baier. *Melliand Textilber. 36, No. 3:* 261-265 (1955); *in German.* Through *BCIRA 35:* 414 (1955).

The effect of acids on tensile-strength and elongation properties of cotton and rayon, the kinetics of their reaction with cotton, and the relationships between degree of polymerization, breaking load, breaking strength, and elongation are discussed. Reference is also made to the determination of the permanganate value as a quantitative measure of degradation in cotton. This method has been modified to be also applicable to viscose and cuprammonium rayon.

Swelling anisotropy. Part 2. Swelling anisotropy of various textile fibers.

C. J. H. Pinte and P. Rochas. *Bull. Inst. Textile France No. 50:* 7-15 (December, 1954); *in French.* Through *BCIRA 35:* 414 (1955).

The coefficients of swelling anisotropy were determined in viscose and cuprammonium rayon, acetate rayon and natural silk in order to study the fine structure characteristics of the fibers.

NATURAL FIBERS A 1

Annual varietal and environmental study of fiber and spinning properties of cottons, 1954 crop.

June, 1955. 83 p. Available from U. S. Agricultural Research Service, Field Crops Research Branch, Beltsville, Maryland. Free.

Results of fiber and yarn tests on current cotton varieties and strains for the crop year 1954 are presented.

Summary of fiber and spinning test results for some varieties of cotton grown by selected cotton improvement groups, crop of 1954.

February, 1955. Agriculture information bulletin No. 137. 43 p. Available from U. S. Agricultural Marketing Service, Washington 25, D. C. Free.

Improved equations for predicting skein strength of carded yarn with special reference to current commercial production of American cotton.

R. W. Webb. April, 1955. 18 p. AMS-13. Available from U. S. Agricultural Marketing Service, Washington 25, D. C. Free.

This report presents two new count-strength-product equations for predicting skein strength of carded warp singles yarn of any size over a wide range with special reference to current commercial production of American cotton. The new equations are better adapted for predicting strength of yarn processed from the general run of American upland cottons in current commercial production than are similar count-strength-product equations published previously by the Cotton Division of the U. S. Department of Agriculture. 25 references.

The strength and weakness of cotton fibers. Part 2. Reversal distribution and breaking properties.

H. Wakeham and N. Spicer (Textile Research Institute). *Textile Research J. 25:* 585-591 (July, 1955).

Previous work has shown that the structural reversals of cotton fibers are points of weakness at which the fibers prefer to break. The present paper is concerned with the distribution of these reversals in the individual fibers and with differences in reversal frequencies for various cotton varieties. It is shown that individual fibers vary greatly in their tendency to break at reversals. Fiber reversals are much more frequent at the tip end of the fiber than at the base end. In general, cotton varieties which have high reversal frequencies are weaker cottons as determined by single-fiber and bundle strength tests. The implications of these findings to mechanical properties of the fibers and to their behavior in yarns are discussed. 10 references.

Fiber degradation in mechanical processing.

A. J. Hall. *Textile Recorder 73:* 65-67 (July, 1955).

An assessment of the significance of the damage caused to the cotton fiber in mechanical processing with an account of the methods available for determining its intensity. 7 references.

Botanical studies in cotton quality. Part 1. Morphological factors affecting proneness to nep.

J. P. Evenson (Empire Cotton Growing Corporation). *Empire Cotton Growing Rev. 32:* 157-167 (July, 1955).

The causes of two types of nep, tangled nep and seed coat nep, which are important faults in the spinning of certain cottons, are described and previous work on neppiness is outlined. Studies in seed coat nep are discussed and it is shown that this fault arises from the weakness of the chalazal cap on the seed coat. A technique of estimating proneness to seed coat nep is described. It is suggested that the tuft of lint attached to the chalazal cap of the seed may, by virtue of its lower maturity, be a serious potential source of tangled nep, and a technique for estimating proneness to tangled nep is suggested. 18 references.

Seedcoat fragments in cotton . . . an element of yarn quality.

N. L. Pearson. May, 1955. 16 p. U. S. Department of Agriculture Technical Bulletin No. 1116. For sale by the Superintendent of Documents, Washington 25, D. C. 15 cents.

This bulletin presents a classification and description of seedcoat fragments in cotton, together with results of a study of the variations in their content in selected yarns and the extent to which these variations were related to those in the structures giving rise to the fragments. 13 references.

Cotton Trade Journal international yearbook, 1954-1955.

1955. 224 p. Available from Cotton Trade Journal, Inc., Memphis, Tenn. $3.00.

This research number contains articles on cotton growing, marketing, manufacture, and research in many different countries.

Market outlets for cotton in some of the principal cotton fabrics. Supplement 4. Carded sales yarn.

W. L. Ashby and W. J. Martin. July, 1955. 29 p. Available from the U. S. Agricultural Marketing Service, Washington 25, D. C. Free.

This report is concerned with the qualities and the processing performances of the cottons used by United States mills in the production of carded sales yarns. It is the seventh in a series developed as a part of a broad project designed to help strengthen the competitive position of cotton by providing to those concerned with breeding, producing, merchandising, and processing raw cotton better bases for selecting, pricing, and using the qualities and varieties of cotton most advantageous to them and to their customers. 10 references.

Technological reports on trade varieties of Indian cottons, 1954.

C. Nanjundayya. Indian Central Cotton Committee Technological Bulletin Series A, No. 87. February, 1955. 80 p.

Dependence on moisture content of the small-angle x-ray scattering power of cellulose fibers.

F. Stern. *Trans. Faraday Soc. 51, Part 3:* 430-441 (1955). Through *BCIRA 35:* 415 (1955).

The variation of the small-angle x-ray scattering power of ramie and jute fibers with moisture content has been determined experimentally. The results can be explained by assuming the fibers to consist of crystalline and amorphous regions such that, as water is absorbed by the fiber, the former maintain their density while the latter become progressively more dilute, making allowance for the volume contraction which takes place during sorption.

Theory of fiber extraction. Chapter 2. The structure of fibrous plants (contd.).

J. G. Thieme. *Textile Quart. 5:* 96-104 (April-June, 1955).

Turkish or Anatolian wools.

A. S. Demiruren, R. H. Burns and A. Johnston (University of Wyoming). *J. Textile Inst. 46:* P369-P376 (June, 1955).

This study of Turkish wools was conducted to determine the physical properties of Turkish wools from the processing and manufacturing standpoint, as well as to apply these properties in a wool improvement program. 21 references.

The crystalline/amorphous ratio of keratin fibers. Part 1. Hailwood-Horrobin analysis of the water-adsorption isotherms.

C. H. Nicholls and J. B. Speakman (Leeds University). *J. Textile Inst. 46:* T424-T426 (June, 1955).

The water-adsorption isotherms of three wools and mohair were determined at 25°C. 5 references.

The crystalline/amorphous ratio of keratin fibers. Part 2. The hydrogen-deuterium exchange reaction.

R. W. Burley, C. H. Nicholls and J. B. Speakman (Leeds University). *J. Textile Inst. 46:* T427-T432 (June, 1955).

The proportion of disordered (amorphous) material in wool may be assessed by exposing a sample of known dry weight to saturated deuterium oxide vapor and expressing the gain in dry weight, due to the hydrogen-deuterium exchange reaction, as a fraction of the maximum possible gain in weight, calculated from the constitution on the assumption of complete accessibility to deuterium oxide. Using this procedure, the order of accessibility of three wools and mohair has been shown to be the same as that given by the Hailwood-Horrobin analysis of their water-adsorption isotherms, but the exchange reaction gives very much higher values, ranging from 0.87 for Lincoln wool to 0.82 for mohair, for the fraction accessible to heavy water. 6 references.

Merino staple crimp: the relationship of staple "character" and variability of fiber thickness.

W. R. Lang and A. Skertchly (Gordon Institute of Technology). *J. Textile Inst. 46:* T433-T439 (June, 1955).

No significant relationship was found between excellence of staple "character" and uniformity of fiber thickness, and hence of fiber length, within the staple, nor did the presence of an extremely coarse group of fibers in the frequency distribution of thickness appear to have any influence on the staple structure in respect to "character". 16 references.

Physical properties of wool fibers: tensile properties. Part 2.

Wool Sci. Rev. No. 14: 27-38 (April, 1955).

The load-extension curve of wool is discussed. 6 references.

MAN-MADE FIBERS A 2

Synthetic fibers, metallic, stretch and bulk yarns produced in United States.

Am. Textile Reptr. 69: 57-74, 78 (July 14, 1955).

This 1955 revision is in three sections: (1) technical and production data of 22 principal synthetic fibers, (2) facts on leading metallic yarns, and (3) facts about stretch and bulk yarns. Names and addresses of manufacturers are given.

Industrial uses of artificial fibers. Part 1.

R. W. Moncrieff. *Fibres 16:* 227-231 (July, 1955).

After an introduction, the achievements that have been made on high tenacity fibers are discussed.

Technical progress in man-made and synthetic fiber production. Part 2. Polyamides and polyesters.

H. Rathert. *Fibres 16:* 243-245 (July, 1955).

Experimental studies on the structure of polyamide fibers.

K. Schwertassek. *Faserforsch. u. Textiltech. 6, No. 2:* 45-53 (1955); *in German.* Summary in *BCIRA 35:* 415 (1955).

Textiles with new properties from cellulose triacetate.

R. G. Stoll (Celanese Corp. of America). *Textile Research J. 25:* 650-661 (July, 1955).

This paper outlines why cellulose triacetate, which has been known for 90 years, has only recently become a fiber-forming material of considerable commercial interest. After giving a brief historical background, it describes the structure of triacetate as developed by heat treatment and the utilization of heat treatment for the improvement of fiber and fabric properties. It further presents data on the durability of triacetate yarns and fabrics when exposed to various service conditions and outlines the possible use in so-called ease-of-care and wash-and-wear fabrics and garments. 6 references.

Vibroscope measurements of the elastic moduli of nylon 66 and Dacron filaments of various draw ratios.

J. H. Wakelin, E. T. L. Voong, D. J. Montgomery, and J. H. Dusenbury. (Textile Research Institute). *J. Appl. Phys. 26:* 786-792 (July, 1955).

By use of the electrostatic vibroscope method, dynamic measurements have been made of the Young's modulus derived from bending and the torsional modulus of nylon 66 and Dacron filaments ranging in draw ratio from one (undrawn) to six. Quasistatic measurements have also been made to obtain the Young's modulus derived from extension. 11 references.

Terlenka.

J. C. Meijberg. *Enka Breda Rayon Rev. 9:* 41-48 (May, 1955).

History, products, manufacture, and uses of the Netherlands polyester fiber Terlenka.

Processing Terylene filament yarn.

Man-Made Textiles 32: 44-46 (July, 1955).

These notes provide a summary of the latest official recommendations concerning details of technique in the handling of Terylene yarn at all stages of manufacture.

Data concerning synthetic fibers. Part 4. Terylene polyester fiber.

P. S. Nagar. *Man-Made Textiles 32:* 50-52 (July, 1955).

Composition and manufacture, properties, dyeing, and uses.

Man-made fibers data sheets: polyvinyl chloride fibers.

P. A. Koch. *Modern Textiles Mag. 36:* 45-46, 54-55, 59-60, 64 (August, 1955).

Data, including product names, development, chemistry, manufacture, products application, properties, patents, etc. 86 references.

YARN PRODUCTION B

The story of good running work.

D. Bendlair. *Textile Ind. 119:* 70-77 (August, 1955).

An illustrated story for teaching employees the far-reaching consequences of non-uniform drawing sliver. The overseer answers the spinner's question on what made so many ends come down during the day.

Effect of oxidizable oil-containing textile assistants on rayon fibers and fabrics.

K. Taufel, R. Vogel and A. Wicklein. *Faserforsch. u. Textiltech. 6, No. 2:* 53-57 (1955); *in German.* Through *BCIRA 35:* 397 (1955).

The problem of the ageing stability of textile assistants is discussed (with reference to their unsaturated components), and the necessity of determining analytically the behavior and suitability of raw materials, and intermediate and finished products, is pointed out. The testing method to be developed must be based on the principle that the ageing stability depends mainly upon the oxidizability of the olefinic components, i.e. the autoxidation of the unsaturated fatty acids. The chemistry of fat autoxidation is discussed (with reference to the formation of peroxides and hydroperoxides, and secondary reactions), the difference between depolymerization and autoxypolymerization being mentioned. The action of oxidants and antioxidants and of synergists is reviewed. 15 references.

New constructions in German spinning machinery.

W. Arndt. *Textil- u. Faserstofftech. 5, No. 2:* 88-95; *No. 3:* 171-175 (1955); *in German.* Through *BCIRA 35:* 397 (1955).

The author reviews new constructions in cotton, worsted and woolen spinning machinery, pointing out the increasing demands for abbreviated spinning processes, increased productivity and yarn regularity, improved appearance of the machines and better protection against accidents. The machines, described and illustrated, include carding machines, speed frames and ring-spinning machines.

OPENING, PICKING, FIBER PREPARATION B 1

Big sandwich mix for rayon.

Textile Ind. 119: 100-103 (August, 1955).

A comprehensive mill-made blending system at a plant which had adapted conventional linen-system spinning equipment to the production of tufting yarn. Diagram.

CARDING AND COMBING B 2

Jute carding practice and associated problems.

C. M. Watson. *Textile Quart. 5:* 114-127 (April-June, 1955).

Origin of jute carding practice, characteristics of fiber in the selection of bales comprising the batch, make-up of bales, mill operations, oiling, and conditioning.

Woolen spinning. Part 1. Some aspects of production control.

B. Jowett. *Wool Rev. 27:* 37-39 (July, 1955).

Efficiency in carding may be studied by using the Centralograph, a mechanical means of analysis and recording of stoppages.

Gauges of card wire clothing.

Vereniging Tilburgse Textieltechnici V.T.T. *Tex 14, No. 1:* 69-74 (1955); *in Dutch.* Through *BCIRA 35:* 324 (1955).

Various systems of card wire gauges (English, American, French and German) are reviewed.

New construction of web dividers.

W. Petersen. *Textil-Praxis (English ed.) No. 2:* 61-64 (May, 1955).

See *TTD 12:* 285 (July, 1955).

Increase production with large doffers.

Textile Ind. 119: 80-82 (August, 1955).

One of the common means to obtain improved quality at an accelerated production rate is to use

a large diameter finisher doffer on woolen cards. These large diameter doffers range in size from 48″ to 54″ and in some instances to as much as 60″ in diameter.

Carding. Part 2.

E. Sattler. *Melliand Textilber. 36, No. 3:* 219-222 (1955); *in German.* Through *BCIRA 35:* 397 (1955)

In this article the author considers the possibility of increasing the production rate by increasing the number of revolutions of the main cylinder, summarizing the work performed by the individual card rollers, the clearer, the doffer, and the main cylinder.

Card load, action of the fly roller and card wire manufacture.

G. Schlese. *Textil-Praxis 10, No. 3:* 232-234 (1955); *in German.* Through *BCIRA 35:* (1955).

The types and manufacture of card clothing are reviewed, with special reference to various carding theories explaining the mechanism and efficiency of individual card components.

DRAWING AND ROVING B 3

Measurement of drafting forces—its use and evaluation.

W. Wegener and H. Bechlenberg. *Reyon, Zellwolle u. Chemiefasern No. 3:* 142-155 (1955); *in German.* Through *BCIRA 35:* 440 (1955).

Experiments carried out on Perlon slivers treated with various brightening agents and lubricants show that a large number of long fiber bundles in the cross section of the sliver produce a greater increase of the drafting force than a large number of short fibers. In the case of periodically occurring accumulations of fibers with the same length (bad mixing), increased scattering and variations in the frequency distribution are found to occur; thus, the quality of the fiber mixture and the fiber length distribution can be determined by measuring the drafting forces. The highly sensitive measuring device was described in the previous article (see *TTD 12:* 332, August, 1955).

High and highest drafts shown on the drawing system PK 211 E with pendulum arms. Part 2.

T. Wiendl. *Textil-Praxis 10, No. 4:* 319-323 (1955); *in German.* Through *BCIRA 35:* 440 (1955).

Constructional details of the drawing system are described and experiments are discussed, which were carried out in collaboration with spinning mills and which show that high drafts can only be obtained if the preparatory machines are working satisfactorily and produce a roving with optimum regularity.

Single apron high drafting with pendulum arm weighting.

Tweedales and Smalley Ltd. *Globe Review 1:* 94-101 (July, 1955).

A drafting system specially designed for normal and very high drafts. Photographs, tables, diagrams.

High draft on the flyer and ring spinning frame.

E. Toenniessen. *Melliand Textilber. (English ed.) 36, No. 1:* 20-23 (1955).

See *TTD 12:* 100 (March, 1955).

A contribution to the high draft theory.

O. Konig. *Textil-Praxis 10, No. 4:* 344-347 (1955); *in German.* Through *BCIRA 35:* 440 (1955).

Causes of the irregularity, occurring in rovings in an individual drawing zone during high drafting, are investigated and it is shown that the theory of floating fibers does not explain sufficiently the processes taking place. A further cause of the irregularity is described as bulging out of the roving.

Investigations on the Kepa draw frame.

S. Klinger. *Melliand Textilber. 36, No. 3:* 222-224 (1955); *in German.* Through *BCIRA 35:* 398 (1955).

In this article, the author discusses the yarn regularity as a function of the spring pressure and in dependence of the quantity of the fibers fed. Experimental results are discussed and diagrams are given.

High and maximum drafts as shown by the example of the draw-frame PK 211 E.

T. Wiendl. *Textil-Praxis 10, No. 3:* 227-230 (1955); *in German.* Through *BCIRA 35:* 399 (1955).

Constructional details are given of the draw-frame in which the upper rollers, each of which has its own guiding arm with a helical pressure spring, automatically adjust themselves parallelly to the axis of the running bottom rollers. Other characteristics of the system, which is supplied with one- or two-apron drawing rollers, are described and advantages are enumerated.

SPINNING, WINDING, TWISTING B 4

The reduction of the continuous balloon.

L. Hamelin. *Industrie Textile:* 159-161

(March, 1955); *in French.* Through *BCIRA 35:* 400 (1955).

The balloon-restricting device, described and illustrated, makes it possible not only to increase the winding speed but also to reduce appreciably changes in the yarn tension due to variations in the balloon length. The stabilizing action on the balloon is effected by two ring drives which displace, respectively, the guide bar and the ring bar on which the traveler is mounted.

Streamline production in flax spinning.

S. A. G. Caldwell. *Textile Mfr. 81:* 375-377, 382 (July, 1955).

The new techniques and machines are discussed.

Cost control in woolen spinning.

Wool Sci. Rev. No. 14: 17-26 (April, 1955).

An elementary introduction to costing in woolen spinning.

The scientist looks at the wool industry: worsted spinning. Part 1.

Wool Sci. Rev. No. 14: 3-16 (April, 1955).

The theory underlying the practice in conventional worsted spinning processes is discussed. This theoretical approach suggests ways in which the conventional spinning system could be improved and these new developments will be discussed in a later article. 7 references.

Controlled ballon spinning. Part 2.

Globe Review 1: 84-93 (July, 1955); *Textile Merc. 133:* 145-148 (July 22, 1955).

An economic valuation of large package high speed spinning under actual mill conditions. Graphs, tables, etc.

Pot spinning system.

J. J. McCann. *Textile Age 19:* 22-24 (August, 1955).

A brief explanation of the McCann pot spinning method.

More pounds per spindle.

Textile Age 19: 78-80 (April, 1955).

A discussion of some of the problems involved in larger packages in spinning.

A new slubbing motion for ring spun weft and knitting yarns.

Tweedales and Smalley (1920) Ltd. *Textile Merc. 133:* 69, 73 (July 8, 1955).

With a new type of slub motion (Brit. Pat. 617 134) achieved by means of an additional mechanism at the ring spinning frame the increase or decrease in length between slubs varies considerably and the cycle of slubs is extremely long before the mechanism repeats itself.

New pneumatic waste collector unit for spinning frames.

Pneumafil Corp. *Textile Age 19:* 16-20 (August, 1955).

The new Economizer waste collecting unit for installation on spinning frames with the Pneumafil system is smaller, more compact but with greater efficiency than former model. Photographs. Diagrams.

Checklist for spinning frames.

J. E. Allen. *Textile World 105:* 113, 115 (August, 1955).

From the machine condition, processing troubles can be checked. From the results, the cause and the remedy can be checked.

Bonding nylon tapes.

O. E. Butcher (William Kenyon and Sons). *Textile Age 19:* 83 (April, 1955).

How to get the most out of Whitin quillers.

E. R. Bechner. *Textile World 105:* 117, 119 (August, 1955).

Pointers are given for a thorough study of band transfers and defects in quilling.

Theory and practice of flax spinning. Part 2. Machinery and equipment. Chapter 15. Winding (contd.).

A. V. Pringle. *Textile Quart. 5:* 128-130 (April-June, 1955).

Large package creates new winding methods.

E. R. Swanson (Universal Winding Co.). *Textile Age 19:* 40-41 (April, 1955).

A table gives detailed settings and instructions for handling the winding of nylon, Dacron, and perlon yarn.

Precision cross winding of rayon and synthetic warp yarns: a means of increasing production.

G. Sahm. *Melliand Textilber. (English ed.) 36, No. 1:* 26-28 (1955).

A discussion of the outstanding features of precision cross winding. Diagrams, photographs.

Processes for the production of twist.

P. Laurent. *Industrie Textile:* 161-163 (March, 1955); *in French.* Through *BCIRA 35:* 400 (1955).

Two processes are described. In the first (developed by the Etablissements Agache) each

drawing head receiving two slivers consists of a twin condenser (instead of the usual single one). By means of this condenser, the slivers remain separated from each other during the drawing passage and twist is imparted to them before they are joined into a single thread. In the second process (a Dutch invention) the balloon-forming thread is allowed to pass through a rotating false-twist device and then to unite with the other thread which is directed from the bobbin by a thread guide through an adjustable tightening device and through an eyelet to the joining point. The tension necessary for balloon formation is produced by an accumulator disc fixed to the false-twist device.

Features and adaptability of the woolen ringframe. Part 4. Permanent and temporary twist.

J. A. B. Mitchell. *Textile Mfr. 81:* 350-352 (July, 1955).

False twist crimping of nylon yarns.

British Nylon Spinners Ltd. *Textile Mfr. 81:* 383-384 (July, 1955); *Skinner's Silk & Rayon Record 29:* 776 (July, 1955).

The necessary equipment for this false twist technique can be readily fitted to most types of existing uptwister. The process is claimed to be about 4½ times more productive per spindle than by the old method.

YARNS B 5

Effect of finish on tire cord breaking strength.

J. P. Parker (American Enka Corp.). *(Letter to the editor). Textile Research J. 25:* 601-602 (July, 1955).

The Tek-Ja process.

Am. Textile Reptr. 69: 11-12, 45 (August 4, 1955).

A report on Tek-Ja bonded no-twist yarn processing and properties.

Stretch yarns.

H. H. Richardson (Universal Winding Co.). *Modern Textiles Mag. 36:* 32, 65 (August, 1955).

A summary of types, processes and brand names.

FABRIC PRODUCTION C

British tufting machine speeds up carpet production.

Tufting Machinery Ltd. *Textile Wkly. 56:* 136-138 (July 8, 1955); *Textile Merc. 133:* 100-104 (July 15, 1955).

The basic principle of operation is simple: theoretically the machine consists of a series of sewing machine heads, the yarn is passed through needles, each needle tufting a pile through a fabric base. The machine is fed from cone creel and to maintain even tension each end is guided through tubes to the tensioning rollers. When the exhausted cones are replenished a compressed air gun is used to draw the yarn through the tube. From the tension rollers the yarn passes to the needles through the reeds and a compensating bar and care is taken that even tension and spacing is maintained. The woven backing cloth, which can be either jute, rayon or cotton, is fed into the machine by rollers which are synchronized with the pin roller in the delivery end of the machine and these two rollers govern the number of tufts per inch warpways, while the tufts weftways are determined by the number of needles. The yarn is tufted through the fabric base by loopers moving at right angles to the needles; each loop and every needle can be adjusted by screws. Diagrams. Photographs.

WARPING, SLASHING, YARN PREPARATION C 1

The new Ruti sizing machine type LSMA with Artos flat dryer.

A. Gasser. *Melliand Textilber. (English ed.) 36, No. 1:* 28-30 (1955).

Features of the machine are described.

Examination of size concentration by means of the hand refractometer.

R. Hunlich. *Melliand Textilber. 36, No. 4:* 389 (1955); *in German.* Through *BCIRA 35:* 444 (1955).

The size-bath concentration can be accurately adjusted and maintained constant by means of the Zeiss hand refractometer 0/50. A few drops of the solution are placed on the surface of the measuring prism, the prism to be illuminated is opened and the apparatus is directed towards the light source. Through the eyepiece, a scale is seen which appears to extend over a light and dark field; the boundary line between the two fields shows on the scale the content of dry solids with an accuracy of 0.2 per cent. Clear, light-colored solutions (e.g. starch) are measured in transmitted light; solutions which, during sizing of colored warps, have a tendency to bleeding, are measured in reflected light.

Modern method for the preparation of colored warps.

H. Rotter. *Melliand Textilber. 36, No. 3:* 239-242 (1955); *in German.* Through *BCIRA*

35: 403 (1955).

The method for the large-scale preparation of colored warps consists in warping the raw yarns (arranged according to their counts) on to perforated warping rollers and dyeing them in a warp-beam dyeing apparatus. The dyed, wet warp beams, each color separately, are put into the beaming frame of the sizing machine and wound on to special 130-cm long conical sheet-metal bobbins which are then pushed over wooden beams and held by a groove to prevent them from rotating. The equipment and the process of leasing the colored ends are described in detail.

On the properties of yarn tension devices. Part 3. The behavior of yarn tensioners during pirn winding.

J. A. Kalkman. *Enka Breda Rayon Rev. 9:* 67-79 (May, 1955).

This article describes the result of an investigation into the behavior of a few tensioners on a pirn-winder. Subjects for this investigation were three types of yarn tension devices: a finger tensioner, disc tensioners with compensation devices, and balancing tensioners. Photographs, graphs.

WEAVING C 2

Automatic let-off for narrow looms.

Textile Ind. 119: 78-79 (August, 1955).

A simple but effective automatic device for warp let-off is described and illustrated.

Causes of warp yarn breakages during weaving.

J. Svedova. *Textil 9, No. 2:* 38-40 (1954); *in Czech.* Through *BCIRA 35:* 405 (1955).

Causes and types of warp-yarn breakages are investigated and experimental results are tabulated showing the percentage yarn breakage due (a) to impurities, thin places and bad knots in the yarn and (b) to machine operations. The experiments were carried out at varying positions of the back rail on a heavy Ruthardt loom and on an automatic Roscher loom, and the breakages occurring in front, in, and behind the harness are listed. Physical and mechanical tests on the warp yarn showed that the average tensile strength generally corresponded to the required values. Since no accurate testing devices for the dynamic determination of the warp tension were available, it was only possible to evaluate the static warp tension during the individual stages of the weaving process.

Devices for increasing the output of a broadcloth loom.

W. Liebchen. *Melliand Textilber. (English ed.) 36, No. 1:* 32-37 (1955).

Dobby shedding. Part 2.

A. T. C. Robinson. *Skinner's Silk and Rayon Record 29:* 765-766 (July, 1955).

The mechanism and action of dobbies.

Influence of warp tension on the tufts in moquettes.

R. Hunlich. *Melliand Textilber. (English ed.) 36, No. 1:* 38-40 (1955).

If the tufts in moquettes are not firmly secured to the ground or foundation fabric, they will impair the quality of the fabric and lead to complaints on the part of the customers. The cause of this defect may be faulty tension conditions in the ground warp, resulting in inadequate binding of the pile at the back of the cloth.

Jute and linen weaving. Part 2. Chapter 12. Cloth taking-up motions.

T. Woodhouse and T. Milne. *Textile Quart. 5:* 105-113 (April-June, 1955).

Loom-stop analysis.

P. Wierks. *Textile World 105:* 97, 178 (August, 1955).

A mill loom-stop analysis showed that over half of all loom stops were caused by just four items. As a result, a four-item loom inspection program was started.

A loop fabric produced by warp slackener.

A. Valdon. *Industrie Textile:* 181-182 (March, 1955); *in French.* Through *BCIRA 35:* 405 (1955).

In the method described for weaving looped fabrics (developed by V. Louison) a warp slackener is inserted between the lay and the warp beam, which loosens and bends the warp simultaneously with each displacement of the lay. According to the manner in which the warp interlaces with the weft, the loops are regularly or irregularly arranged in the fabric. The device is easily adaptable to all looms.

The manufacture of lay swords from laminated wood.

R. Landon. *Industrie Textile:* 183-184 (March, 1955); *in French.* Through *BCIRA 35:* 404 (1955).

A process is described in which wood, rendered malleable by treatment with urea, can be twisted, hardened and compressed, if desired, to impart to it the final shape. The wood foils thus obtained are treated with neutral aluminum acetate to give them a certain rigidity, and are laminated and joined in the manner described in the article to

give rigid swords which are resistant to deformation.

The measurement of processes on the loom.

W. Rohs and H. Stein. *Forschungsber. Wirtsch.- u. Verkehrsmin. Nordrhein-Westfalen No. 92:* 1-64 (1953); *in German.* Summary in *BCIRA 35:* 405 (1955).

See also *TTD 12:* 239 (1955).

Methods of obtaining cover at the loom. Part 1.

H. C. Spencer. *Textile Mfr. 81:* 356-357 (July, 1955).

The aim of these articles is to simplify the theory of cover and to discuss practical experience with the problem.

The practice of terry weaving. Part 1.

W. Riesnert. *Textil-Praxis 10, No. 3:* 246-250 (1955); *in German.*

The practice of terry weaving. Part 2.

W. Riesnert. *Textil-Praxis 10, No. 4:* 348-351 (1955); *in German.* Through *BCIRA 35:* 445 (1955).

Devices for controlling the lay are described and causes of faulty loop formation discussed.

A study in loom fixing.

F. D. Herring. *Textile Bull. 81:* 94-97 (July, 1955).

How to find what is wrong with the loom quickly and get the loom back into production without delay.

Types of Jacquard machines.

H. Muchow. *Melliand Textilber. 36, No. 4:* 386-389 (1955); *in German.* Through *BCIRA 35:* 444 (1955).

Various constructions of Jacquard machines for hand and mechanical looms are described, with special reference to the special machines for terry weaving, pile weaving and production of coir yarn fabrics.

Various constructions of the Knowles dobby motion for controlling the change box.

J. Schneider. *Z. ges. Textil-Ind. 57, No. 8:* 416-423 (1955); *in German.* Through *BCIRA 35:* 444 (1955).

The elementary form of the Knowles dobby motion is described and illustrated, and its use on the Schonherr SG 4 loom and on the Hartmann crank loom is discussed. Comparison is made between the Knowles dobby motions on Schonherr- and Astra-looms, with reference to the four- and five-box shuttle changes from both sides of these looms and their adjustment.

Warp tension and cloth control. Part 3.

J. Starkie. *Textile Mfr. 81:* 369-371 (July, 1955).

The speed of the take-up roller determines the picks per inch in the cloth and this article describes and illustrates standard methods, slipping friction drive, five wheel motions, the Pickles motion, spring weighted arrangements, continuous, direct and negative take-up motions.

Weaving defects. Part 4. Broken picks, mispicks, thick and thin places.

C. O. Cronic. *Textile Ind. 119:* 94-95 (August, 1955).

KNITTING C 3

Knitting plated goods on flat knitting machines.

W. Busch. *Melliand Textilber. (English ed.) 36, No. 1:* 44 (1955).

The plating of fabrics produced on flat knitting machines offers numerous possibilities of extending the range of qualities and patterns produced, without expensive and complicated additional equipment. The only accessories required are the relatively simple plating devices, which are provided with two openings for separate feeding of the threads and can easily be installed in place of the normal thread guides on almost all types of flat bed knitting machines.

New methods to control knit-fabric quality.

Textile World 105: 110-111 (August, 1955).

British knitting mills are using new methods to maintain fabric quality at a constant level. Two instruments that are used to assist the controlling are a yarn-speed meter and a cloth-measuring device.

Tricot knitting with cut pressers.

J. B. Lancashire. *Knitter 19:* 32-34 (July, 1955).

The provision of a cut presser on a spring needle tricot machine greatly widens its patterning possibilities, giving scope for the manufacture of many novel and attractive effects in stitches and colors. Six examples of typical fancy fabrics are illustrated.

FABRICS C 4

Air permeability of parachute cloths.

H. W. S. Lavier (Georgia Institute of Tech-

nology). Wright-Patterson Air Force Base, Ohio, Wright Air Development Center, Air Research and Development Command, February, 1955. 83 p. WADC Technical Report 52-283 Part 4.

The high-pressure air permeability of selected nylon, Orlon, and Dacron parachute-type fabrics was determined using a 16-square-inch sample. The Georgia Tech high-pressure permeometer used in this program permitted testing the fabric samples at pressure differentials across the cloth equivalent to 1500 inches of water. The selected cloths are described and include experimental cloths woven in the laboratories of the Georgia Institute of Technology. Air-permeability data for selected fabrics are presented here in graphical and tabular form as volumetric flow (cubic feet per minute) and effective porosity versus the static pressure differential across the cloth. The selected fabrics were chosen to demonstrate the effect on high-pressure air permeability resulting from variation of the number of ends and picks per inch, weave patterns, and material. Also, the effect on high-pressure permeability, due to variation of temperature and absolute humidity, was investigated.

Chemical structure and the useful properties of textiles.

A. M. Sookne (Harris Research Laboratories, Inc.). *Textile Research J. 25:* 609-617 (July, 1955).

Some of the relationships between the chemical structure of fibers and the end uses and useful properties of textiles are discussed. 8 references.

Design in woven structure. Part 32. Figured designs by adding marks to plain weaves.

D. C. Snowden. *Wool Rev. 27:* 35-37 (July, 1955).

Fibers, dyes, weaves of newest fabrics cause many headaches.

D. S. Lyle (National Institute of Drycleaning). *Am. Textile Reptr. 69:* 51-55, 75 (July 14, 1955).

Drycleaning and consumer problems with synthetic and blended fabrics are discussed.

New developments in tricot fabrics.

L. L. Walmsley (American Viscose Corp.). *Am. Dyestuff Reptr. 44:* P490-P493 (July 18, 1955).

The latest use proposed for tricot fabrics is in the manufacture of fitted bed sheets. The author discusses rather fully the experimental work that is being conducted with respect to the choice of fibers and fiber combinations, yarn sizes, setting procedures, cutting methods, and other factors that are important for the development of superior tricot fitted sheets.

Properties of fabrics: Orlon with rayon.

E. I. du Pont de Nemours and Co., Inc. Wilmington, Del., May, 1955. Bulletin OR-49. 7 p.

A guide to the selection of fiber blends for outerwear apparel. 7 references.

Standardization of wound textiles.

H. Baron. *Nature 175:* 760-763 (April 30, 1955). Through *BCIRA 35:* 445 (1955).

The role and advantages of textile dressings in the healing of wounds are indicated. The influence of the number of layers of fabric applied and of the type of fabric (gauze or cambric) on healing is discussed. The properties, construction, etc., required of wound textiles are considered.

Typical cloths: woolen overcoatings. Part 1.

S. Brierley. *Textile Mfr. 81:* 354-355 (July, 1955).

Woolen fabrics allow much wider variety in finishing than is possible with worsted goods. Milling and the influence of yarn twist are discussed.

FINISHING AND CHEMICAL PROCESSING D

How Europe's dyers handle spun rayons. Part 1.

D. Fornelli. *Modern Textiles Mag. 36:* 43-44 (August, 1955).

A report on current European practices in dyeing and finishing spun rayon cloths.

New process for the manufacture and finishing of stockings from synthetic yarn.

L. Stegmeyer. *Textil- u. Faserstofftech. 5, No. 3:* 179-182 (1955); *in German.* Through *BCIRA 35:* 406 (1955).

The generally used finishing methods are reviewed and a new dyeing and setting method is described which consists in dyeing the stockings in closed bags made of loosely woven gray cotton cloth which have been previously boiled thoroughly to remove any loose fibers, impurities, etc. Setting of the stockings is carried out not after sewing but after dyeing. Several processing stages are thus eliminated.

CHEMICAL PROCESSES D 1

Textile finishing developments. Part 4. Finishing.

Textile Wkly. 55: 672, 674, 676 (March 4, 1955); 750, 752, 754 (March 11, 1955); 984,986 (April 1, 1955) and 1233-1234, 1236 (April 22, 1955). Through *BCIRA 35:* 409 (1955).

This review covers cyanoethylated cotton, anti-shrinkage finishes for cellulosic fabrics, resin finishes for improvement of luster of cotton and rayon fabrics, treatment for increasing strength and durability of fabrics, crease resist finishes, linenizing finish for cotton, process for imitation lace effects on cotton and other fabrics, resin-finished embossed fabrics, unshrinkable wool finishes, fire-proof finishes, partially acetylated cotton, and anti-static finishing.

Emulsions in wool processing.

Textile Mfr. 81: 385-389 (July, 1955).

Emulsions have wide applications in textile processing and the phases, action and application of emulsions in wool oiling and scouring are discussed together with observations on the use of detergents and organic solvents. 8 references.

New problems in the photocolorimetric analysis of fabrics treated with optical bleaching agents.

C. J. Pinte and P. Rochas. *Melliand Textilber. 36, No. 4:* 362-367 (1955); *in German.* Through *BCIRA 35:* 449 (1955).

The photocolorimetric analysis of fabrics treated with optical bleaching agents, can be carried out satisfactorily only if the photocolorimeters used meet certain theoretical conditions. The apparatus must be capable of measuring the intensity and color of the fluorescence, of recording the course of the curve with reference to the fluorescence effect, and of giving a colorimetric analysis of the samples regardless of the fluorescence. Such a colorimeter works on the following principles: The light source emits spectral light with constant ultra-violet content. The sample receives all the light emitted in the visible and invisible region. The system filter/photocell analyses of the light scattered by the sample in the visible region and also, in the case of optically bleached samples, the light emitted as a result of fluorescence. It is also possible to remove, by inserting a suitable filter in the path of the incident light, its total ultra-violet contact and to carry out colorimetric analyses without taking into account the fluorescence of the samples.

Rubber-coated materials.

V. Girtanner. *Textil-Rundschau 10, No. 3:* 105-113 (1955); *in German.* Through *BCIRA 35:* 410 (1955).

The types and uses of rubber-coated textiles are briefly discussed and the historical development of coating methods is reviewed, with special reference to hot vulcanization (based on cross-linking rubber molecules by means of sulfur), to the cold vulcanization process with sulfur monochloride, and to the coating of fabrics with natural and synthetic latex. The water-tightness test is mentioned, and the properties required of the fabric to be coated, and suitable fabrics are enumerated. Reference is also made to the problem of rendering rubber-coated fabrics air-permeable by a process in which the impregnating agent consists of a benzol-rubber solution containing a certain amount of finely dispersed precipitated chalk. A bibliography of books, periodicals and patents relating to rubber technology is appended.

The cyanoethylation of cellulose.

B. C. M. Dorset. *Textile Mfr. 81:* 378-382 (July, 1955).

The author discusses the progress and possibilities of this chemical modification of cotton.

European crease-resist finishes on spun viscose rayon fabrics. Part 3.

H. W. Best-Gordon, E. Pieper and C. P. Tattersfield. *Man-Made Textiles 32:* 58-63 (July, 1955).

A comparative study of standard commercial results from eight countries. 5 references.

Practical crease-proofing.

H. Schmink. *Textil- u. Faserstofftech. 5, No. 3:* 197-200 (1955); *in German.* Through *BCIRA 35:* 410 (1955).

The author discusses the principles of the crease-proofing process and gives practical directions for the pretreatment of the cloth, preparation of the solution, impregnation, condensation, and after-treatment of the fabric. Softening and water-proofing agents may be used simultaneously. Changes in color and light-fastness, formaldehyde and fishy odors, and the evaluation of the anti-crease effects are discussed, and the unsuitability, for crease-proofing, of fabrics made from delustered fibers or nozzle-dyed spun rayon and cellulose acetate rayon is pointed out.

Continuous desizing of fabrics.

J. Voss. *Textil-Rundschau 10, No. 3:* 125-129 (1955); *in German.* Through *BCIRA 35:* 407 (1955).

This is a historical review of desizing methods,

with special reference to the development of continuous open-width desizing with bacterial analyses.

Protection of textiles against rot and mildew. Part 2. Testing methods.

H. M. Ulrich. *Textil-Praxis 10, No. 3:* 278-281 (1955); *in German.* Through *BCIRA 35:* 411 (1955).

In continuation of the previous article, the author reviews chemical anti-rotting agents (tanning agents; phenols, cresols and salicylic acid derivatives; metal compounds; organic acid salts; fluoro-compounds; pyridinium and phosphonium compounds) and discusses the properties of antiseptic preserving agents for incorporation into sizing, finishing and thickening agents and adhesives. Antiseptic agents mentioned in the literature are enumerated. 29 references.

Protection of textiles against rot and mildew. Part 3.

H. M. Ulrich. *Textil-Praxis 10, No. 4:* 366-370 (1955); *in German.* Through *BCIRA 35:* 454 (1955).

In continuation of previous articles, the author reviews literature (18 references) on the behavior of antiseptics on the fiber (applied together with the sizing or finishing agent), the amount of antiseptics present on the fibers, the solubility of various antiseptics, and methods for determining the fungicidal and bactericidal as well as the chemical properties (on the fiber) of the rot-proofing agents used.

The application of proteins to wool to reduce felting. Part 1. Casein.

D. L. C. Jackson and A. R. A. Backwell. *Australian J. of Applied Science 6:* 244-254 (June, 1955).

The felting of wool fabric has been prevented by treatment with an aqueous dispersion of casein followed by hardening the casein *in situ* with formaldehyde. A total weight increase, after hardening, of 4-5 per cent on the weight of wool is required for effective shrinkproofing. 6 references.

The reaction between wool and sulfuryl chloride in the presence of alcohols.

A. J. Farnworth. *Australian J. of Applied Science 6:* 230-243 (June, 1955).

The rate and extent of reaction between wool and sulfuryl chloride is greatly increased by the addition of small amounts of aliphatic alcohols. The cystine and tyrosine residues in wool are considerably degraded under these conditions. A satisfactory degree of unshrinkability is then attainable in 2-5 minutes at room temperature. 21 references.

The activity of carboxymethylcellulose during the washing process.

H. Stupel. *Melliand Textilber. 26, No. 4:* 355 (1955); *in German.* Through *BCIRA 35:* 464 (1955).

In principle, there are two mechanisms to which prevention of dirt redeposition during washing can be attributed: (a) the carboxymethylcellulose (CMC) envelops the dirt particles, and (b) the fiber adsorbs the CMC particles. In order to prove the fiber-CMC adsorption theory, an attempt was made to render visible the adsorbed CMC by means of Acridine Orange, which stains the CMC so that it shows red color in the ultra-violet light of the fluorescence microscope. Dilute solutions, such as those present in the wash-liquor, give no color effect. In the experiments with ramie, purified cotton wool, cotton, rayon, etc., no CMC was detected on the fibers, but added, or accidentally present, soil particles (soot, natural organic soils, fats, fatty acids, mineral oil, etc.) became rapidly and thickly coated with the CMC in the solution. The experiments are being continued.

Making Enkalon fabrics durably water-repellent.

K. Trutmann. *Enka Breda Rayon Rev. 9:* 112-120 (July, 1955).

Water-repellency experiments were made with the following products applied Enkalon: Phobotex FT, Drisil 104, Drisil 148 emulsion, and Quilon. Drisil 148 emulsion and Quilon were the most satisfactory. 9 references.

DYEING AND PRINTING D 2

Fiber strength and high temperature dyeing.

F. Gasser and F. Weber. *Textil-Praxis 10, No. 3:* 276-277 (1955); *in German.* Through *BCIRA 35:* 408 (1955).

Data on the impairment of fiber properties by high-temperature dyeing are reviewed and it is concluded that, when dyeing natural fibers and staple or continuous filament viscose rayon, the temperature should not exceed 105-110°C. For these fibers, the method is only of advantage when dyeing cakes or tippy wool. In the case of mixtures of synthetic and natural fibers, it is better to treat the components separately. The method should find application in dyeing Dacron, which does not respond to the cuprous-ion method or to normal dyeing.

Du Pont Naphthanil red 3G base continuously coupled without neutralization.

Du Pont Tech. Bull. 11: 62-63 (June, 1955).

Recent studies on fibers damage by the ageing of sulfur black dyeings on viscose spun rayon subjected to various after-treatments.

G. Nitschke. *Melliand Textilber. 36, No. 4:* 369-372 (1955); *in German.* Through *BCIRA 35:* 450 (1955).

The effects of various drying and storage conditions on sulfur black dyeings on viscose spun rayon subjected to various aftertreatments were examined and are discussed. For dyeings, dried at medium temperatures, not exposed to prolonged storage under warm and humid conditions, and repeatedly to be rinsed during further processing, carbonization of the fiber by any sulfuric acid, formed as a result of autoxidation of the dye, may be counteracted by careful rinsing with water or neutralization with a weak organic acid in the last rinsing bath. If drying is carried out at high temperatures, the material is to be stored for a long period in a warm and humid atmosphere, and the dyeing process is the last wet process to which the material is subjected, a weak alkali or alkaline salt is preferably added to the last rinsing bath in place of the acid.

Some directions for dyeing cellulose with vat dyes, pigments and phthalogens.

H. K. Andras. *Z. ges. Textil-Ind. 57, No. 7:* 355-359; *No. 8:* 435-439 (1955); *in German.* Summary in *BCIRA 35:* 450 (1955).

Dyeing of polyacrylonitrile fibers.

H. Faldik. *Melliand Textilber. 36, No. 4:* 360-362 (1955); *in German.* Summary in *BCIRA 35:* 451 (1955).

Dyeing Acrilan acrylic fiber.

Du Pont Tech. Bull. 11: 74-87 (June, 1955).

Recent observations on the dyeing of Acrilan together with recommendations as to the most suitable Du Pont dyes for use on the fiber. Tables of fastness properties.

Ardil protein fiber finishing.

H. G. Frohlich. *Z. ges. Textil-Ind. 57, No. 8:* 430-435 (1955); *in German.* Through *BCIRA 35:* 448 (1955).

Directions are given for bleaching Ardil, Ardil/wool and Ardil/cotton blends, and for dyeing Ardil alone and in mixtures with cellulosic fibers or wool. Reference is also made to printing mixed fabrics with chromium complex dyes, substantive dyes, mordant dyes, etc. and some suitable compositions are given.

Dyeing blends of Dacron polyester fiber and cotton.

Du Pont Tech. Bull. 11: 64-68 (June, 1955).

Laboratory investigations on dyeing blends of 65% Dacron and 35% cotton have established practical methods and formulas for a complete shade range with particular emphasis on the production of medium and dark shades. Present recommendations for preparation, dyeing and finishing, as well as shade formulations, are included.

Dyeing stretchable nylon yarns and materials.

Du Pont Tech. Bull. 11: 69-73 (June, 1955).

This article gives information on dyeing stretchable nylon yarns and also recommends other handling techniques.

Difficulties in stripping Orlon dyed by cuprous ion technique.

D. R. Sharma and K. S. Campbell (North Carolina State College). *(Letter to the editor). Textile Research J. 25:* 602 (July, 1955).

Improved method for level application of cationic dyes to Orlon type 42 acrylic fiber.

Du Pont Tech. Bull. 11: 60-61 (June, 1955).

New techniques for leveling and stripping of cationic dyes on Orlon type 42 acrylic fiber and blends containing Orlon.

Du Pont Tech. Bull. 11: 58-59 (June, 1955).

Dyeing of mixtures of Terylene polyester fiber and wool.

A. S. Fern and H. R. Hadfield (Imperial Chemical Industries). *J. Soc. Dyers Colourists 71:* 277-282 (June, 1955).

This paper describes an investigation of the dyeing properties of Terylene-wool mixtures. Details are given of the dyeing variables which may affect the partition of dyes between Terylene and wool, and results are presented which enable the most suitable disperse dyes to be selected. A comparison has been made of the fastness properties of laboratory-dyed Terylene-wool mixture material with those of commercially piece-dyed wool. A suggested practical dyeing method for Terylene-wool mixtures is given. 8 references.

Dyeing of tops without impairing their spinning properties.

K. Wojatschek. *Melliand Textilber. (English ed.) 36, No. 1:* 49-54 (1955).

Top or slubbing dyeing is discussed from the aspect of dyehouse practice. In the opinion of the author, the spinning properties of the dyed slubbing can be influenced very considerably by suitable control of the dyeing process and proper selection of the dyestuffs. 9 references.

Stock dyeing.

J. Bauer (Fred Whitaker Co.). *Am. Dyestuff Reptr. 44:* P497-P500 (July 18, 1955).

General aspects of stock dyeing and stock dyeing at temperatures above the boil are discussed. 8 references.

Connections between structure and dyeing behavior of wool.

A. Wurz. *Melliand Textilber. (English ed.) 36, No. 1:* 56-68 (1955).

A theoretical treatment of the dyeing behavior of wool. 16 references.

The fixation of direct cotton dyes.

R. Gill. *J. Soc. Dyers Colourists 71:* 380-389 (July, 1955).

The various types of compounds used in the fixation of direct cotton dyes on cellulosic fibers are classified according to constitution, and examples are quoted to show the general structural requirements for fixation. A theory is presented to account for the fact that, besides increasing the fastness to wet processing, fixatives in general also may cause change in color and decreased light fastness. Unlike the older idea of precipitation within the fiber, this theory enables the effect of the fixative on the dichroism of the dyed fibers to be predicted. Results are presented to show that the resultant effects are as expected, and finally a comparison is drawn between direct dyeings aftertreated with cationic fixatives and acid dyes on wool. The conclusion is drawn that there is a definite limit to the increase in fastness to washing with soap, or other anionic detergents, which may be attained with cationic fixatives generally. 21 references.

New methods or new dyes?

A. F. Cheshire. *Man-Made Textiles 32:* 55-56 (July, 1955).

Dye adaption is one of the keys to progress in the dyeing of man-made fibers and this article considers some of the more outstanding achievements and possible new developments.

The relation of the reflectance of dyed fabrics to dye concentration and the instrumental approach to color matching.

E. Atherton (Imperial Chemical Industries Ltd.). *J. Soc. Dyers Colourists 71:* 389-401 (July, 1955).

The factors governing the reflectance of light by a dyed fabric are discussed, and several theories relating this factor to dye concentration are noted. They may all be reduced approximately to simple reciprocal functions of reflectance. Special reference is made to a theoretical treatment, similar to that given by Kubelka and Munk, for conditions of normal illumination (such as prevail in a spectrophotometer), and the use of this theory in the prediction of matching recipes is illustrated with reference to a simple laboratory instrument. 15 references.

Relationships between structure and dyeability of synthetic fibers.

A. Wurz. *Melliand Textilber. 36, No. 4:* 356-360 (1955); *in German.* Summary in *BCIRA 35:* 451 (1955).

Comments on package-dyeing machines.

A. P. March (Smith-Drum and Co.). *Am. Dyestuff Reptr. 44:* P494, P496 (July 18, 1955).

A machinery manufacturer makes some comments on the manufacture and use of package-dyeing machines. Kier corrosion is aggravated by high temperatures, various electrolytes, and rapid changes in temperature. He especially gives advice on the corrosion problem and emphasizes the importance of the use of the latest stainless steel. The use of carriers increases the versatility of package machines, and the use of control panels reduces costs and promotes uniformity of processing.

New machine dyes and sizes warps.

R. W. Pinault. *Textile World 105:* 94-95 (August, 1955).

Empire Piece Dyeing and Finishing Co. has developed a continuous dyeing and sizing process for rayon, acetate, and cotton warps that cuts labor costs 50% over skein or package methods. It dyes directly from the manufacturer's beams, which reduces handling and waste and produces warps that weave with 15% better efficiency.

Some mechanical improvements for dyeing and finishing.

H. Creegan (James Hunter Machinery Co.). *Am. Dyestuff Reptr. 44:* P495-P496 (July 18, 1955).

Continuous cloth washers, Vapojet drying, Eicken-system instruments and the Barotor are briefly discussed. 5 references.

The Turbinator in textile dyeing and finishing.

J. L. Hausermann and E. Hablutzel. *Melliand Textilber. (English ed.) 36, No. 1:* 74-80 (1955).

See *TTD 12:* 257 (June, 1955).

New fastness ratings for developed dyes on spun rayon.

Du Pont Tech. Bull. 11: 88-99 (June, 1955).

How to iron out profit loss in the print room.

D. V. Guillemette. *Textile Age 19:* 30-35 (August, 1955).

Sources of waste in printing and suggested remedies are presented. Layout diagrams.

Textile printing in London and the home counties.

D. King (Victoria and Albert Museum). *J. Soc. Dyers Colourists 71:* 374-380 (July, 1955).

A historical survey of the development of textile printing in the London area, from the Middle Ages until the present day.

Vigoureux or melange printing.

H. Gurtler. *Melliand Textilber. (English ed.) 36, No. 1:* 70-74 (1955).

MECHANICAL PROCESSES D 3

Back-up embossing.

Textile Ind. 119: 83-85 (August, 1955).

Embossing is done by a pair of rolls: a top roll made of steel and engraved with the desired pattern, and a bottom paper roll. The process depends on regulation of the heated top roll, the pressure on the fabric passing between top and bottom rolls, and the surface speed of the material being embossed.

Experiences in hot setting of synthetic fibers.

F. Fourne. *Textil-Praxis 10, No. 3:* 270-275 (1955); *in German.* Through *BCIRA 35:* 410 (1955).

The essential differences between hot-air and saturated-steam setting of synthetic fibers (nylon and Perlon) are summarized in a table. Both processes have their characteristic advantages: hot-air setting, which can be carried out continuously, gives greater elasticity and changes only slightly the dye affinity, whereas saturated-steam fixing imparts to the product a fuller handle and the equipment is easy to operate. Fixing of knitted and woven fabrics and yarns, pleating, pre-steaming of stockings, steaming of hanks, and decating are discussed.

Some aspects of the mechanical finishing of cotton textiles.

G. M. Nabar and G. P. Tawde (University of Bombay). *J. Soc. Dyers Colourists 71:* 343-350 (June, 1955).

Some aspects of mechanical finishing processes for cotton textiles, mainly calendering, have been examined, and the influence of heat, pressure, moisture content, and starch content on the resultant finish investigated. An increase in moisture content of the fabric during calendering produces the following effects on the finished samples —increase in stiffness and luster, decrease in thickness, loss in textile qualities, and increase in resistance to abrasion. On storage, both the stiffness and the luster of the calendered fabric show a gradual fall. With softening agents, the stage at which they are added to the starch paste determines the viscosity of the paste and the stiffness of the fabric. Studies on soluble starches show that for pastes of the same viscosity the stiffness of the fabric depends on the amount of the starch taken up and on the concentration of the starch. 11 references.

DRYING D 4

Nozzle dryer for fabrics with adjustable length of loops.

O. Kiefer. *Melliand Textilber. (English ed.) 36, No. 1:* 84 (1955).

Features of a dryer manufactured by Maschinenfabrik Kiefer, Germany.

Card sliver dryer.

H. Kittel. *Melliand Textilber. (English ed.) 36, No. 1:* 80-82 (1955).

Problems of sliver drying and features of a machine developed by Maschinenfabrik Fleissner and Sohn, Germany.

The effect of the steam content in the drier on the quality of textile drying.

A. Meier-Windhorst. *Melliand Textilber. 36, No. 3:* 276-280 (1955); *in German.* Through *BCIRA 35:* 411 (1955).

The effect of the drying medium composition on the processes taking place in the textile material during drying and the main changes in the physical state of the material to be dried are discussed, by comparing hot-air drying, drying in the drier at a medium steam content, and drying at a maximum steam content (hot-steam drying). The risk of over-drying in the case of hot-air drying and the conditioning action taking place during drying at medium and high steam contents are pointed out.

TESTING AND MEASUREMENT E

ASTM standards on glass and glass products.

April, 1955. 128 p. Available from the American Society for Testing Materials, 1916 Race Street, Philadelphia 3, Pa. $1.50.

A section on glass textiles gives revised specifications and methods of test.

FIBERS E 1

Comparison of the Willows-Markert swelling reaction with the mean polymerization value of cotton.

G. Stingl and H. Vollenbruck. *Melliand Textilber. 36, No. 3:* 217 (1955); *in German.* Through *BCIRA 35:* 414 (1955).

Microscopical observation of the shape of fiber-ends during the Willows-Markert swelling reaction with sodium hydroxide made it possible to develop a rapid method for determining the chemical tendering of cotton fibers. Although small differences in the degree of tendering cannot be detected, the typical swelling forms are in good agreement with those found by determining the degree of polymerization, e.g. in undamaged and hypochlorite-bleached cotton (from DP 2400 down to DP 500).

Cotton testing service: tests available, equipment and techniques, and basis for interpreting results.

February, 1955. AMS No. 16. 49 p. Available from U. S. Agricultural Marketing Service, Washington 25, D. C. Free.

This bulletin describes various cotton fiber and manufacturing tests available on a fee basis under the Cotton Testing Service Act, the methods employed in making the tests, and the significance of the test results.

Density of modified cottons determined with a gradient column.

R. S. Orr, L. C. Weiss, H. B. Moore and J. N. Grant (Southern Regional Research Laboratory). *Textile Research J. 25:* 592-600 (July, 1955).

A rapid method which compares favorably in accuracy with that of slower methods for measuring the density of cellulosic materials with a gradient column is described. Densities of several cottons before and after chemical modification by partial acetylation, carboxymethylation, aminization, and mercerization are given. Per cent acetyl can be expressed as a function of density in a linear empirical equation over a range of 13 to 42% acetyl with a precision of plus or minus 2%. Density measurements of decrystallized, ball-mill ground, and acid hydrolyzed cottons were in agreement with the generally accepted concept of the crystalline-amorphous cellulose phase composition in these materials. Cotton from which water was removed by solvent exchange was found to have a high density before, and a low density after, air drying. 29 references.

An evaluation of methods for determining the linters content of cottonseed.

M. E. Whitten and C. E. Holaday. June, 1955. 29 p. AMS-51. Available from U. S. Agricultural Marketing Service, Washington 25, D. C. Free.

The principal objectives of the present study were: (1) to provide basic information on the accuracy of present laboratory methods of determining the linters content of cottonseed, and (2) to develop a more accurate, more rapid and more economical method of determining the linters content of cottonseed. 7 references.

Looking at fibers with X-rays.

J. W. S. Hearle. *Skinner's Silk and Rayon Record 29:* 760-763 (July, 1955).

X-ray diffraction techniques for studying fiber structure are discussed. 22 X-ray fiber photographs. Diagrams.

Measuring the crimp of fibers.

J. Onderstal. *Enka Breda Rayon Rev. 9:* 98-105 (July, 1955).

Method and apparatus for measuring the crimp of individual fibers. Photographs, diagrams, tables, graphs.

YARNS E 2

Autocorrelogram computer.

G. Revesz (British Rayon Research Assoc.). *J. Sci. Instr. 31:* 406-410 (November, 1954).

A comparatively simple and inexpensive instrument capable of computing autocorrelation functions is described. It was built for the analysis of irregularity in yarn, roving and slivers in the textile industry, but it should find application in a much wider field in cases where the high accuracy of the expensive precision computer is not required. The instrument also lends itself to the computation of cross-correlation functions. Principles of operation and construction are given together with data on performance. The yarn irregularity is recorded on a magnetic tape as a frequency-modulated signal and use is made of a modified d.c. watthour meter for carrying out the multiplying and integrating operations. 11 references.

Check on the running off of cones.

J. A. Kalkman. *Enka Breda Rayon Rev. 9:* 96-97 (July, 1955).

In addition to its utility in the appraisal of the quality of yarn and in the testing of cone winders, the blow-off cone winding controller also serves a useful purpose in the evaluation of cone

cores, when the last layers of yarn on the cone are watched with special vigilance to make sure that unwinding is faultless and the yarn undamaged.

Checking the irregularity of picker laps.

H. Locher. *Melliand Textilber. (English ed.) 36, No. 1:* 4-14 (1955).

The aim of this article is to examine the influence the irregularity of the picker lap may have on the yarn, and show how the irregularity of the picker lap is conducted into the yarn, and what influence this magnitude may have on the yarn. The article describes a new means for continuous testing of picker laps.

The collective yarn test by means of the harp dynamometer.

Arbeitsgemeinschaft Deutscher Textilingenieure. *Textil-Praxis 10, No. 3:* 235-242 (1955); *in German.* Through *BCIRA 35:* 416 (1955).

The principles of the tensile strength tester developed by Schumacher are described and the basis is given for calculating the mean tensile strength of yarns with different tensile stress-elongation curves (of the cotton, staple fiber, Perlon and wool type) from the collective load (at which 5 per cent of the yarn ends tested break) and the critical elongation (at which 5 per cent of the yarn ends break). The effect of the maximum of the elongation-frequency curve on the calculation of the mean elongation is discussed and the values obtained on this tester are compared with those determined with the Uster dynamometer, the Schopper tester and the Wolpert tester.

Estimation of the voluminousness of yarns.

J. Lako and L. S. Veer. *Enka Breda Rayon Rev. 9:* 88-95 (July, 1955).

A voluminosity test applied to a parallel-wound yarn package is described. Apparatus and procedure are given. Photographs, tables, graphs.

Evaluation of the working properties of tire cord.

A. Springer. *Faserforsch. u. Textiltech. 6, No. 2:* 76-81 (1955); *in German.* Through *BCIRA 35:* 417 (1955).

The method described for determining the working efficiency of tire cords is a simple beating test carried out by means of a pendulum-type impact tester. The error limit of this method is compared with the mean error of the tensile-strength test and it is shown that the impact values depend to a great extent upon the elongation of the material. Tendering of the cord during processing and fatigue of the material as a result of stress on the tire are expressed by a decrease in puncture resistance. The values obtained by the beating test depend upon the preliminary tension of the yarn and its moisture content and show in this respect a relationship to the practical behavior of the cord in the tire.

Measuring the stiffness of filament yarns.

J. Prins. *Enka Breda Rayon Rev. 9:* 54-61 (May, 1955).

The method, described in detail, is an elaboration of the method described by Carlene *(J. Textile Inst. 41:* T159, 1950). Photographs, diagrams, graphs.

The nominal strength of yarn with reference to the fiber test.

O. Meissner. *Textil-Praxis 10, No. 3:* 230-231 (1955); *in German.* Through *BCIRA 35:* 416 (1955).

A nomogram is given for the calculation of nominal yarn strength on the basis of the fiber test, which consists in determining (a) the fiber strength by means of the Pressley apparatus (in lb./square inch), (b) the fiber fineness by means of the Micronaire, (c) the average mean staple by means of the Fibrograph, and (d) the uniformity (per cent) of the staple.

Statistical tests of color blending on yarns and rovings.

A. G. Hampson and W. J. Onions (Leeds University). *J. Textile Inst. 46:* T377-T390 (June, 1955).

In this work 5 tests have been devised to measure the efficiency of color mixing in a roving or yarn. In particular, sample rovings taken at different stages in the processing can be compared, and this problem considered—at what stage, if any, can the roving be considered as perfectly mixed. An outline of the statistical bases for these tests is presented.

A twist irregularity meter for tire cord.

V. E. Gonsalves. *Enka Breda Rayon Rev. 9:* 81-87 (July, 1955).

An electronic instrument, the AKU twist irregularity meter, designed by N. V. Research is described and illustrated.

FABRICS E 3

A cloth profile recorder.

K. J. Butler, W. T. Cowhig and W. J. Morris (British Rayon Research Association). *Skinner's Silk and Rayon Record 29:* 732-735 (July, 1955).

An instrument for tracing the profile of the surface of a fabric is described and illustrated. It has proved useful in the investigation of many kinds of cloth faults. Photographs, diagrams, graphs.

Comparative study of the transparency of fabrics from various fiber types.

N. Duveau. *Bull. Inst. Textile France No. 50:* 39-46 (December, 1954); *in French.* Through *BCIRA 35:* 418 (1955).

The transparency of fabrics from natural, artificial and synthetic fibers has been examined, spectrophotometrically and by photography, in the near infra-red, visible, and near ultra-violet light range. It was found that the general course of the transparency curve is the same for all fabrics tested, the transparency increasing gradually from the ultra-violet to the infra-red, the increase being more or less rapid according to type of fabric (greater for cotton, wool, Thermovyl, etc., than for Orlon, Crylor and viscose). The Crylor sample showed a lower transparency than Orlon (although their chemical structure is the same); this difference is probably due to the differences in the cross-section or internal or surface structure of the fibers. The good agreement between the spectrophotometric and photographic results points to the usefulness of the latter method for rapid testing of fabrics.

Third report of the Fastness Tests Coordinating Committee.

Society of Dyers and Colourists. *J. Soc. Dyers Colourists 71:* 283-342 (June, 1955).

Colorfastness test methods are given for fastness to bleaching, burnt gas fumes, carbonizing, chlorinated water, acid chlorination, cross-dyeing, decatizing, degumming, acid felting, light, daylight, mercerizing, metals in the dyebath, milling, organic solvents, perspiration, acid planking, potting, pressing, rubbing, sea water, soda boiling, spotting, steaming, stoving, sublimation, washing, and water.

Determination of the crease recovery of woven fabrics.

J. A. Kalkman. *Enka Breda Rayon Rev. 9:* 49-53 (May, 1955).

In recent years there has been a growing tendency to improve the crease recovery of fabrics composed of rayon filament and/or spun rayon yarns by treating them with synthetic resins and various methods have been devised for measuring crease recovery and expressing it numerically. Six of these methods have been studied in the textile laboratory of the N. V. Research at Arnhem, Holland, and are reviewed in this article. 8 references.

INDUSTRIAL ENGINEERING F

Automation.

J. Diebold (John Diebold and Associates, Inc.). *Textile Research J. 25:* 635-640 (July, 1955).

The implications of automation in the American economy.

Higher productivity in cotton and rayon weaving.

H. Mitchell. *Time and Motion Study 4, No. 3:* 27-31 (1955). Through *BCIRA 35:* 445 (1955).

The main factors which have contributed to the progress of productivity in the cotton and rayon weaving industry are reviewed. The main sections of the industry: warp and weft winding, warping and beaming, sizing, entering, weaving and cloth inspection, are considered from the aspects of plant and machinery development, use of resources, and the increased use of modern management techniques.

Higher productivity in bleaching, dyeing and finishing.

H. Mitchell. *Time and Motion Study 4, No. 4:* 17-22 (1955). Through *BCIRA 35:* 448 (1955).

Ways in which higher productivity has been and is being achieved in bleaching, dyeing and finishing are reviewed in some detail under the main headings: plant and machinery development; more effective use of resources, including operatives, machines and materials; introduction of incentive schemes of wage payment; and increased use of modern management techniques.

MTM—a tool of the future.

M. Bannister. *Time and Motion Study 4, No. 2:* 28-30 (1955). Through *BCIRA 35:* 429 (1955).

To illustrate the advantages of MTM (methods-time measurement) its application to creeling at the ring frame is discussed and data are presented.

Remote viewing in the mill.

L. Walter. *Textile Recorder 73:* 68-71 (July 1955).

With the development of efficient closed-circuit units, television has taken its place as a tool of management. Although, as far as is known, no applications have yet been made in textile processing, the author advances some ideas as to how the method may prove useful.

PATENT CHECKLIST

U. S. Patents may be obtained from the U. S. Patent Office, Washington 25, D. C., for 25 cents per copy. Photostatic copies of foreign patents are available. Charges for these photostats are based on the number of pages in the patent.

Col. 417

YARN PRODUCTION B

Device for crimping filaments, tops and slivers.

Perfogit Societa per Azioni (Italy). BP 722 966, February 2, 1955. Through *BCIRA 35:* 396 (1955).

Strand controlled stop motion.

D. B. McIntyre. USP 2 712 676, July 12, 1955.

Pendant type bobbin holder.

W. H. Tabor (to Dixon Lubricating Saddle Co.). USP 2 712 909, July 12, 1955.

SPINNING, WINDING, TWISTING B 4

Device for detecting a broken or loose sliver end as it passes to the reel on which it is being wound.

F. Snowden, G. C. Campbell, N. A. Walker and W. Barber (to Electronics (Bradford) Ltd). BP 722 800, February 2, 1955. Through *BCIRA 35:* 401 (1955).

Bearing and lubricating arrangements for spindles.

F. A. Navarro. BP 722 840, February 2, 1955. Through *BCIRA 35:* 401 (1955).

Device for unwinding imperfectly wound bobbins on double-twist spindles.

K. Landolt (to C. Landolt and Co., Switzerland). BP 722 848, February 2, 1955. Through *BCIRA 35:* 402 (1955).

Safety device for double twist spindles.

K. Landolt (Switzerland). BP 722 849, February 2, 1955. Through *BCIRA 35:* 402 (1955).

Traveler for use on vertical sintered-metal doubling rings having flat or square upper and/or lower ends.

A. Gustav, W. Colbeck and F. G. Thorpe (to Morgan Crucible Co. Ltd). BP 722 912, February 2, 1955. Through *BCIRA 35:* 401 (1955).

Winding machine of the upright spindle type.

F. Scragg (to Sydney and E. Scragg Ltd). BP 723 154, February 2, 1955. Through *BCIRA 35:* 402 (1955).

Col. 418

Means for detecting yarn failure on a winding machine in which vertical spindles are driven by contact with an endless belt.

F. Scragg (to Sydney and E. Scragg Ltd). BP 723 269, February 2, 1955. Through *BCIRA 35:* 402 (1955).

Spindle drives.

K. H. Lorenz, H. Zobel and E. Schafer (to Textima Spinnereimaschinenbau Chemnitz Veb). BP 723 353, February 9, 1955. Through *BCIRA 35:* 443 (1955).

Spindle bearings for high-speed, uptwist spinning frames.

B. B. Dearden (to Johnson and Hartley Ltd). BP 723 447, February 9, 1955. Through *BCIRA 35:* 443 (1955).

Ring frame with cotton sliver supply in cans located below frame.

W. H. Watson and F. Heywood (to T.M.M. Research Ltd). BP 723 470, February 9, 1955. Through *BCIRA 35:* 442 (1955).

Traversing mechanism of centrifugal spinning system.

E. E. Feather (to Prince-Smith and Stells Ltd). BP 723 753, February 9, 1955. Through *BCIRA 35:* 442 (1955).

Supports for double-twist spindles.

A. D. Gatling (to Dunlop Rubber Co. Ltd). BP 723 988, February 16, 1955. Through *BCIRA 35:* 443 (1955).

Ring frame drive.

G. E. M. Sagehomme (Netherlands). BP 724 122, February 16, 1955. Through *BCIRA 35:* 442 (1955).

Vertical-spindle ring-and-traveler winding and twisting frame.

F. Scragg (to Sydney and E. Scragg Ltd). BP 724 128, February 16, 1955. Through *BCIRA 35:* 443 (1955).

Yarn winding machine with tail looping eliminator.

E. P. Dodge (to Foster Machine Co.). USP 2 712 906, July 12, 1955.

Apparatus for twisting cord.

R. B. Esler (to The Firestone Tire and Rubber Co.). USP 2 713 242, July 19, 1955.

A device for supporting hollow cakes of processed synthetic yarn while the yarn is being unwound.

N. D. Sigman. USP 2 713 979, July 26, 1955.

Traverse mechanism.

S. B. Roberts, R. H. Roughsedge, A. Edelman and G. E. Koslow (to Celanese Corp. of America). USP 2 713 980, July 26, 1955.

Apparatus for nullifying residual twists of cables.

J. A. L. Rozieres (France). USP 2 714 282, August 2, 1955.

Interlocking control means for the stop-motions of multi-spindle machines.

R. G. Hilbert (to Universal Winding Co.). USP 2 714 491, August 2, 1955.

Yarn tension compensating device.

E. A. Wintz (to Specialties Development Corp.). USP 2 714 494, August 2, 1955.

YARNS B 5

Apparatus for stretching wetted cords or yarns to any desired elongation.

A. E. Herbert, J. Woods and R. Turner (to John Bright and Brothers Ltd). BP 722 931, February 2, 1955. Through *BCIRA 35:* 402 (1955).

Laminated metallic thread.

K. E. Prindle and G. Lacy (to The Dobeckmun Co.). USP 2 714 569, August 2, 1955.

FABRIC PRODUCTION C

WARPING, SLASHING, YARN PREPARATION C 1

Process for rounding a sized rayon yarn, or groups of yarns, that has been somewhat flattened by mangling.

Vereinigte Glanzstoff Fabriken AG (Germany). BP 723 576, February 9, 1955. Through *BCIRA 35:* 446 (1955).

Building motion that can be adjusted to provide for the precision winding of a variety of yarn packages.

D. A. Clough, L. C. Goodwin and C. H. M. Thorpe (to T.M.M. (Research) Ltd). BP 723 683, February 9, 1955. Through *BCIRA 35:* 446 (1955).

Bobbin-stripping machines.

R. Thompson (to British Rayon Research Assoc.). BP 723 957, February 16, 1955. Through *BCIRA 35:* 446 (1955).

Warp drawing-in machine.

C. B. Crandall (to Barber-Colman Co.). USP 2 713 192, July 19, 1955.

Slasher.

L. A. Prescott, Jr. and W. W. Smith (to Tower Iron Works). USP 2 714 240, August 2, 1955.

WEAVING C 2

Means for automatically stopping circular weaving looms.

Saint Freres, Soc. anon. (France). BP 723 246, February 2, 1955. Through *BCIRA 35:* 406 (1955).

Pickers for underpick weaving looms.

G. C. Chidiac. BP 723 262, February 2, 1955. Through *BCIRA 35:* 406 (1955).

Means for preventing in multiple-box weaving the drawing into the warp shed by one shuttle of a loop or end of the weft trail(s) of another shuttle or shuttles.

J. F. Moseley, I. H. Thomas and J. J. Vincent (British Cotton Industry Research Association). BP 723 265, February 2, 1955. Through *BCIRA 35:* 406 (1955).

Heddles for looms.

J. W. Turner and J. L. Hunt. BP 723 298, February 2, 1955. Through *BCIRA 35:* 406 (1955).

Mechanisms for separating the weft threads of drop box looms.

Soc. anon. Adolphe Saurer (Switzerland). BP 723 358, February 9, 1955. Through *BCIRA 35:* 447 (1955).

Shuttleless weaving looms.

R. Dewas. BP 723 379, February 9, 1955. Through *BCIRA 35:* 447 (1955).

Paper pattern indicated dobby.

A. J. Herard, Jr. (to Crompton and Knowles Loom Works). USP 2 712 832, July 12, 1955.

Loom battery thread tensioner.

M. W. Odom and T. B. Hunt. USP 2 712 833, July 12, 1955.

Circular weaving loom.

G. Casati and C. Cazzaniga. USP 2 713 353, July 19, 1955.

Pile fabric weaving with binder interposed between pile and stuffer warp ends.

F. W. E. Hoeselbarth (to C. H. Masland and Sons). USP 2 713 354, July 19, 1955.

Multiple pile staggered W-weaving.

F. W. E. Hoeselbarth (to C. H. Masland and Sons). USP 2 713 355, July 19, 1955.

Apparatus for weaving pile fabrics.

F. W. E. Hoeselbarth (to C. H. Masland and Sons). USP 2 713 356, July 19, 1955.

Shuttle check for loom.

G. N. Peterson (to Crompton and Knowles Loom Works). USP 2 713 357, July 19, 1955.

Filling fork well cleaner.

H. W. Carroll. USP 2 713 358, July 19, 1955.

Adjustable spreader for looms.

J. B. Goodgame (to Precision Gear and Machine Co.). USP 2 713 875, July 26, 1955.

Means for actuating the reversing mechanism of weaving looms.

I. S. Porter (England). USP 2 714 371, August 2, 1955.

Weft threads carrying device for circular weaving looms.

G. Casati and C. Cazzaniga (Italy). USP 2 714 396, August 2, 1955.

Device for shifting pile warp crossings toward fell.

C. L. Morgan (to Belrug Mills of South Carolina). USP 2 714 397, August 2, 1955.

Device for shifting pile warp threads laterally.

C. L. Morgan (to Belrug Mills of South Carolina). USP 2 714 398, August 2, 1955.

Terry pile weaving.

F. W. E. Hoeselbarth (to C. H. Masland and Sons). USP 2 714 399, August 2, 1955.

Weaving with wire variations.

J. H. Harding (to C. H. Masland and Sons). USP 2 714 400, August 2, 1955.

Narrow ware loom.

A. S. Hutchins (to Crompton and Knowles Loom Works). USP 2 714 401, August 2, 1955.

Picker stick lug strap support hanger.

W. H. Drake. USP 2 714 402, August 2, 1955.

Loom operating with gripper shuttle.

R. G. Turner (to Crompton and Knowles Loom Works). USP 2 714 403, August 2, 1955.

Electric weft bobbin feelers for looms.

Soc. anon. Adolphe Saurer (Switzerland). BP 723 923, February 16, 1955. Through *BCIRA 35:* 447 (1955).

Cloth roll support means for looms.

G. Cadorette and H. W. Thatcher (to The Draper Corp.). USP 2 714, 404, August 2, 1955.

KNITTING C 3

Apparatus for rectifying pulled threads in knitted ware.

R. Susemihl. USP 2 712 743, July 12, 1955.

Permanently set hosiery and other knit goods.

L. P. Miller and T. Foulk (to Sanson Hosiery Mills, Inc.). USP 2 712 744, July 12, 1955.

Full fashioned hosiery measuring device.

P. A. Meytre. USP 2 712 755, July 12, 1955.

Yarn holder and cutters.

C. W. Minton. USP 2 713 254, July 19, 1955.

Method and apparatus for mending hosiery.

E. E. Zane and C. J. Caron (to Mojud Co., Inc.). USP 2 713 783, July 26, 1955.

Hosiery repair apparatus.

L. A. André (Mexico). USP 2 714 297, August 2, 1955.

Dial circular knitting machine.

H. E. Crawford. USP 2 714 298, August 2, 1955.

FABRICS C 4

Endless driving belts.

W. A. Kenyon (to William Kenyon and Sons Ltd). BP 724 154, February 16, 1955. Through *BCIRA 35:* 448 (1955).

Fire retardant fabric.

R. A. Black and J. F. Rohs (to Chicopee Mills,

Inc.). USP 2 712 834, July 12, 1955.

Unsized woven fabric bags.

A. F. Ottinger and R. E. Pierce (to Bemis Bro. Bag Co.). USP 2 712 843, July 12, 1955.

Pile floor rug.

F. W. Hartstein. USP 2 713 012, July 12, 1955.

A textile fabric comprising a multiplicity of strands of at least two different types having relatively different lengthwise shrinking characteristics.

C. Robbins II and E. J. Hodgkins (to Bates Mfg. Co.). USP 2 713 193, July 19, 1955.

Washable absorbent woven textile fabrics for diapers.

P. N. Dangel and H. Knohl (to The Kendall Co.). USP 2 713 359, July 19, 1955.

Pile carpet fabrics.

E. C. Bloch and G. Bloch. USP 2 713 360, July 19, 1955.

Absorbent drying cloths.

P. N. Dangel and P. S. Taylor (to The Kendall Co.). USP 2 713 361, July 19, 1955.

An open-mesh ventilating bag for produce.

J. L. Quinn (to Bemis Bro. Bag Co.). USP 2 713 370, July 19, 1955.

Woven pile floor covering.

R. J. Jackson (to Bigelow-Sanford Carpet Co., Inc.). USP 2 713 877, July 26, 1955.

Pile carpet.

F. W. E. Hoeselbarth (to C. H. Masland and Sons). USP 2 714 405, August 2, 1955.

FINISHING AND CHEMICAL PROCESSING D

CHEMICAL PROCESSES D 1

Fireproofing textile and other materials comprising cellulose.

E. W. Wheatley, J. Downing and J. W. Fisher (to British Celanese Ltd). BP 722 826, February 2, 1955. Through *BCIRA 35:* 413 (1955).

Method of bleaching with an alkali metal chlorite.

Val Mehler Segeltuchweberei AG (Germany). BP 723 566, February 9, 1955. Through *BCIRA 35:* 455 (1955).

Waterproofing compositions containing organo polysiloxane resins.

Monsanto Chemicals Ltd. BP 723 989, February 16, 1955. Through *BCIRA 35:* 458 (1955).

Pile fabric produced by feeding cut fiber to a layer of foamed rubber latex on a backing material in an electrostatic field.

E. W. Madge, K. G. Burridge and H. Harcourt (to Dunlop Rubber Co. Ltd). BP 724 078, February 16, 1955. Through *BCIRA 35:* 457 (1955).

Process for the dimensional stabilization of cellulose fabrics.

B. J. Brown and B. Taylor (to Fothergill and Harvey Ltd). BP 724 096, February 16, 1955. Through *BCIRA 35:* 457 (1955).

Sizing treatment of pile fabrics of wool.

A. Gaunt, N. K. Earle and H. J. Ross (to T. F. Firth and Sons Ltd. and Imperial Chemical Industries Ltd.). USP 2 712 683, July 12, 1955.

Method and apparatus for treating a tow of filaments in a non-tensioned condition in a limited space.

J. F. Keggin (to Imperial Chemical Industries Ltd.). USP 2 712 977, July 12, 1955.

Process for producing a fungicidal natural fiber textile material by impregnation with a zinc thiocyanate solution.

W. Schulenburg (to Deutsche Gold- und Silber-Scheideanstalt). USP 2 713 008, July 12, 1955.

Tubular coil yarn processor.

P. M. Cole (to E. I. du Pont de Nemours and Co., Inc.). USP 2 713 784, July 26, 1955.

Process for preventing the fulling shrinkage of wool.

C. R. Barnes (to Albany Felt Co.). USP 2 714 051, July 26, 1955.

Method of increasing the strength of textile material by impregnation with a terpene hydrochloride.

L. L. Nicolau (Spain) USP 2 714 078, July 26, 1955.

Wet heat treatment of textile material of poor electrical conductivity.

E. B. Bates (England). USP 2 714 549, August 2, 1955.

Process for bonding a polyethylene film to a fibrous web.

C. E. Irion and K. E. Prindle (to The Dobeckmun Co.). USP 2 714 571, August 2, 1955.

DYEING AND PRINTING D 2

Reducing the affinity of wool, silk and Lanital for acid dyes by impregnation with sulfamic acid.

Sandoz Ltd. BP 723 690, February 9, 1955. Through *BCIRA 35:* 455 (1955).

Vacuum method and apparatus for bleaching or dyeing yarns.

Pluria Aktiebolaget (Sweden). BP 724 027, February 16, 1955. Through *BCIRA 35:* 455 (1955).

Dyeing of hydrophobic textiles with direct cotton and acid dyes.

H. W. Best-Gordon (to Courtaulds Ltd). BP 724 199, February 16, 1955. Through *BCIRA* 45: 455 (1955).

MECHANICAL PROCESSES D 3

Spreader guide roll.

S. W. Warner (to American Viscose Corp.). USP 2 712 681-682, July 12, 1955.

Apparatus for multi-folding elongated pliable articles.

M. W. Hayden, J. T. MacIsaac, Jr., F. T. Suttenfield and G. H. Simpson (to Fieldcrest Mills, Inc.). USP 2 712 907, July 12, 1955.

Weft-straightening apparatus.

J. Broomfield (to Mount Hope Machinery Co.). USP 2 713 191, July 19, 1955.

DRYING D 4

Hot air fabric dryer.

T. Strattner and A. Grimm. BP 722 033, January 19, 1955. Through *BCIRA 35:* 370 (1955).

Method and apparatus for the shrinking of fabric.

Famatex GmbH (Germany). BP 722 935, February 2, 1955. Through *BCIRA 35:* 413 (1955).

Drying tunnels.

D. G. Hirst (to Courtaulds Ltd). BP 724 057, February 16, 1955. Through *BCIRA 35:* 458 (1955).

Apparatus for drying materials by heat radiation

A. Haltmeier (to Farbenfabriken Bayer AG). USP 2 708 794, May 24, 1955.

Drying apparatus for wound filamentary packages

A. W. Hunter and J. E. Phillips (to American Viscose Corp.). USP 2 709 856, June 7, 1955.

Method for dehydrating and drying of web-like material.

S. Wellmar (to AB Svenska Flaktfabriken). USP 2 711 591, June 28, 1955.

TESTING AND MEASUREMENT E

Electric device for counting thread breakages in textile machines.

Svenska Ventilations A.-B. BP 722 289, January 19, 1955. Through *BCIRA 35:* 359 (1955).

YARNS E 2

Device for testing the regularity of laps by means of variations in electrical capacity.

Deutscher Spinnereimaschinenbau Ingolstadt (Germany). BP 704 010, February 17, 1954. Through *BCIRA 35:* 464 (1955).

Apparatus for testing the strength of a fixed or running yarn under varying conditions of tension, flexure and abrasion

G. A. Baxandall. BP 719 086, November 24, 1954. Through *BCIRA 35:* 275 (1955).

Apparatus for measuring the thickness of lap on the calender roll of a picker.

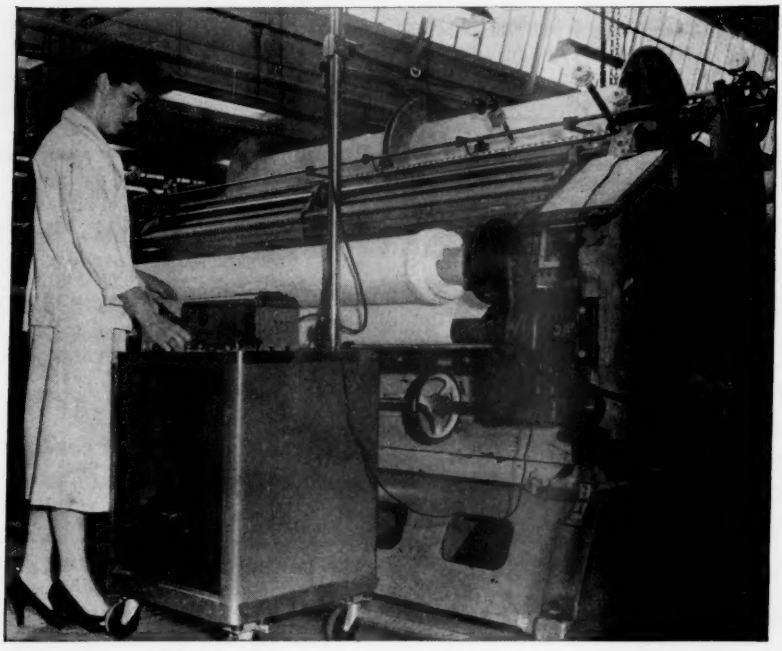
H. M. Brown (to Clemson College). USP 2 713 209, July 19, 1955.

FABRICS E 3

Apparatus and method for testing drape of a fabric.

W. J. Hamburger and C. L. Cummings (to Fabric Research Laboratories, Inc.). USP 2 714 328, August 2, 1955.

BRUSH TEXTILE INSTRUMENTS



Brush Tension Analyzer helps American Viscose improve textile processing

This test setup on a tricot knitting machine at Avisco's Textile Research Dept. utilizes a Brush Analyzer to measure tension on viscose dull yarn. The Analyzer measures and permanently records on graph paper both static and dynamic tensions from 1/10 to 400 grams in filamentary materials.

Mounted on casters, the unit can be used in research, or easily rolled to various production machines. It improves quality control and reduces costs by indicating trouble spots due to improper tension. For information on how Brush Textile Instruments can help *you*, contact our Southeastern Office or write Brush Electronics Company, Dept. CC-9, 3405 Perkins Ave., Cleveland 14, Ohio.

BRUSH OFFERS COMPLETE INSTRUMENT SERVICE

TENSION ANALYZER* IMPERFECTION COUNTER
UNIFORMITY ANALYZER* LAP TESTER
*Trade-Mark

SOUTHEASTERN OFFICE:
GREENVILLE, SOUTH CAROLINA • 91 Cleveland St. • Phone 5-4079

Trained servicemen and complete stock of parts in the Brush Southeastern Office assure fast service when required.

BRUSH ELECTRONICS COMPANY

INDUSTRIAL AND RESEARCH INSTRUMENTS
PIEZOELECTRIC MATERIALS • ACOUSTIC DEVICES
MAGNETIC RECORDING EQUIPMENT AND COMPONENTS

BRUSH ELECTRONICS

Division of Clevite Corporation